Appl. No. 10/626,929
Response Dated November 3, 2004
Reply to Restriction Requirement dated October 5, 2004

Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims

1. (Original)   A method for controlling an air conditioner that is adapted to service an inside space, the air conditioner having a minimum "on" time, the method comprising the steps of:

determining if the humidity level in the inside space is above a predetermined humidity level; and

increasing the minimum "on" time of the air conditioner if the humidity level is above the predetermined humidity level.

2. (Original)   A method according to claim 1 wherein the minimum "on" time is increased by a predetermined fixed amount.

3. (Original)   A method according to claim 1, wherein the air conditioner produces both latent and sensible cooling, and wherein the minimum "on" time is increased by an amount that is expected to produce a desired ratio between latent and sensible cooling of the air conditioner.

4. (Original)   A method according to claim 1, wherein the air conditioner

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produces a maximum latent cooling during steady state conditions, and wherein the minimum

"on" time is increased by an amount that is expected to produce a latent cooling that is a

predetermined percentage of the maximum latent cooling of the air conditioner.

5.   (Original)   A method according to claim 1 wherein the minimum "on" time is

increased by an amount that depends on the humidity level in the inside space.

6.   (Original)   A method according to claim 1 wherein the minimum "on" time is

increased by an amount that depends on the humidity level as compared to one or more

preselected humidity levels.

7.   (Original)   A method according to claim 1 further comprising the step of

turning off the air conditioner if the temperature of the inside space drops below a predetermined

shut-down temperature.

8.   (Original)   A method according to claim 1 further comprising the step of

turning off the air conditioner if the air conditioner runs continuously for a predetermined time-

out period.

9.   (Original)   A method according to claim 1, wherein the air conditioner

operates in air conditioning cycles including a current air conditioning cycle to maintain the

temperature in the inside space at or near a desired temperature set point.

10.   (Original)   A method according to claim 9, wherein the humidity level in the determined and the increasing steps are repeated for each air conditioner cycle.

11.   (Original)   A method according to claim 10 wherein the minimum "on" time is reset before the determining and increasing steps are performed for each air conditioner cycle.

12.   (Original)   A method according to claim 1 further comprising the step of adjusting the minimum "on" time back toward a default or initial value if the determining step determines that the humidity level in the inside space is below a predetermined humidity level.

13.   (Original)   A method according to claim 12 wherein the determining, increasing, and adjusting steps are repeated.

14.   (Original)   A method according to claim 12 wherein the determining, increasing, and adjusting steps are repeated continuously.

15.   (Original)   A method for controlling an air conditioner that is adapted to service an inside space, the method comprising the steps of:

determining if the humidity level in the inside space is above a predetermined humidity

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level; and

decreasing the duty cycle for the air conditioner if the humidity level is above the

predetermined humidity level.

16.   (Original)   A method according to claim 15 further comprising the step of

adjusting the duty cycle toward an initial or default value if the humidity level falls below the

predetermined humidity level

17.   (Original)   A method for controlling an air conditioner that is adapted to

service an inside space, the air conditioner operating in air conditioning cycles including a

current air conditioning cycle to maintain a temperature in the inside space at or near a desired

temperature set point, the method comprising the steps of:

determining if the humidity level in the inside space is above a predetermined humidity

level; and

increasing the run time of the current air conditioning cycle if the humidity level is above

the predetermined humidity level to allow increased latent cooling during the current air

conditioning cycle.

18.   (Original)   A method according to claim 17 wherein the run time is increased

by a predetermined fixed amount.

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19. (Original)   A method according to claim 17 wherein the air conditioner produces both latent and sensible cooling, and wherein the run time is increased by an amount that is expected to produce a desired ratio between latent and sensible cooling of the air conditioner.

20. (Original)   A method according to claim 17, wherein the air conditioner produces a maximum latent cooling during steady state conditions, and wherein the run time is increased by an amount that is expected to produce a latent cooling that is a predetermined percentage of the maximum latent cooling of the air conditioner.

21. (Original)   A method according to claim 17 wherein the run time is increased by an amount that depends on the humidity level in the inside space.

22. (Original)   A method according to claim 17 wherein the run time is increased such that the current air conditioning cycle causes the temperature in the inside space to drop below the desired temperature set point of the inside space.

23. (Original)   A method according to claim 17 wherein the run time is increased such that the current air conditioning cycle causes the temperature in the inside space to drop at least one degree below the desired temperature set point of the inside space.

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24.　　(Original)　　A method according to claim 17 wherein the run time is increased such that the current air conditioning cycle causes the temperature in the inside space to drop at least two degrees below the desired temperature set point of the inside space.

25.　　(Original)　　The method of claim 17 further comprising, after extending the run time of the air conditioner, determining whether the humidity level in the space is below a lower predetermined humidity level, and, if the humidity is below the lower predetermined humidity level, reducing the run time of the air conditioner.

26 - 31.　　(Canceled)

32.　　(Original)　　A method for controlling an air conditioner used to control characteristics of an inside space, wherein the air conditioner has predetermined latent and sensible cooling characteristics, the method comprising:

determining the humidity level in the space; and

if the humidity is above a first selected humidity level, establishing a minimum on time for the air conditioner using the predetermined latent and sensible cooling characteristics.

33.　　(Original)　　The method of claim 32 wherein the minimum on time is at least longer than the amount of time, from initial turn on, that it takes for the air conditioner to reach at least 80% of its steady state latent cooling capacity.

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34.   (Original)   The method of claim 32 wherein the minimum on time is at least

longer than the amount of time, from initial turn on, that it takes for the air conditioner to reach a

60/40 ratio of sensible to latent cooling capacity.

35.   (Original)   A controller for an air conditioner, wherein the air conditioner is

adapted to service an inside space, the air conditioner further having a minimum "on" time, the

controller comprising:

means for determining if the humidity level in the inside space is above a predetermined

humidity level; and

means for increasing the minimum "on" time of the air conditioner if the humidity level

is above the predetermined humidity level.

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